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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,395	10/23/2001	Mustafa Eroz	PD-201012	1278

7590 06/02/2004

Hughes Electronics Corporation
Patent Docket Administration
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EXAMINER

CHASE, SHELLY A

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/053,395	Applicant(s) EROZ ET AL.	
	Examiner Shelly A Chase	Art Unit 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13 to 23 & 26 is/are rejected.
- 7) ☒ Claim(s) 11, 12, 24 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 to 26 are presented for examination.

Specification

2. The disclosure is objected to because of the following informalities: please provide a copy of each reference listed in par. 0012.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7, recites the limitation "the outer said circles" and "the inner said circles", there is insufficient antecedent basis for these limitations in the claim. Claim 20 is similar to claim 7.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 to 10, 13 to 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gelblum et al. (USP 6396871 B1) in view of Webb (USP 5828695).

Claims 1 and 14:

Gelblum substantially teaches a turbo trellis code modulation system for a multi-tone channel, the system comprising: a first RSC encoder [12] encoding the received data to generate the first encoded data (see col. 3, lines 60 to 62), a second RSC encoder [14] receiving input from a random interleaver [16] to generate a second encoded data (see col. 3, lines 62 to 68), and QAM modulator [26] modulates the first and second encoded data received from an assignment controller [24] (see col. 4, lines 10 to 20). Gelblum also teaches that the QAM modulator modulates for noise power gain (see col. 5, lines 11 to 28).

Gelblum does not specifically teach the QAM modulator modulates according to a multi-circular constellation; however, Webb in an analogous art teaches adaptive multi level QAM wherein varied star QAM constellation are used with encoded data (see fig. 2 and col. 3, lines 45 to 50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the QAM modulation technique of Gelblum to include the star constellation as taught by Webb since, Webb teaches that a star constellation provides better BER. This modification would have been obvious because a person of ordinary skill in the art would have been

motivated to employ a modulation technique for achieving better bit error rate (see col. 3, lines 60 to 66).

As per claims **2 to 7** and **15 to 20**, Gelblum does not specifically teach the multi-circular constellation includes two or more circles neither teaches that the symbols in the circles are different; however, Webb teaches the star QAM is a circular constellation including two circles and a 32 level QAM includes more that two circles (see fig. 2). Webb also teaches that the number of bits in the first phase is different form the number of bits in the second phase (see col. 3, lines 50 to 60). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the QAM modulation technique of Gelblum to include the star constellation as taught by Webb since, Webb teaches that a star constellation provides a better BER. This modification would have been obvious because a person of ordinary skill in the art would have been motivated to employ a modulation technique for achieving better bit error rate (see col. 3, lines 60 to 66).

As per claims **8 to 10** and **21 to 23**, Gelblum does not specifically teach that the multit-circular constellation includes 16 or more symbols; however, Webb teaches that the star QAM constellation includes 16 symbols or 32 symbols or 64 symbols (see fig. 2 and col. 4, lines 5 to 20). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the QAM modulation technique of Gelblum to include the star constellation as taught by Webb since, Webb teaches that a star constellation provides a better BER. This modification would have been obvious because a person of ordinary skill in the art would have been motivated to

employ a modulation technique for achieving better bit error rate (see col. 3, lines 60 to 66).

As per claims **13** and **26**, Gelblum teaches the turbo trellis code modulation system includes recursive systematic convolutional encoders (see col. 3, lines 57 to 60).

Allowable Subject Matter

7. Claims 11 to 12 and 24 to 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shelly A Chase whose telephone number is 703-308-7246. The examiner can normally be reached on Mon-Thur from 8:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shelly A Chase

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